



Town of Woodstock, Virginia

March 7, 2012

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DER - Valley
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To: _____
FILE: _____

Mr. Jason Dameron
Department of Environmental Quality
Valley Regional Office
P.O. Box 3000
Harrisonburg, Virginia 22801

Re: Town of Woodstock STP VPDES Permit No. VA0026468

Dear Mr. Dameron:

The Town of Woodstock (Town) is requesting a permit modification for the purpose of reviewing CBOD5 and E. coli monitoring parameters contained in current VPDES permit number VA0026468. This letter serves as an official request from the Town to have the monitoring frequency of both the CBOD5 and E. coli parameters decreased from the required current 5/week and 3/week, respectively, down to 1/week or possibly 1/month.

Operational data for the 2010-2011 period, enclosed herein, provide documentation of a demonstrated record of compliance for each of the above referenced parameters.

Analytical data from 2010 indicates that BOD5 analysis was performed on sample dates from January 1, 2010 to January 7, 2010. These samples were collected from the final effluent while one remaining secondary clarifier was still online. On January 8, 2010, the MBR filtration system was put online and began operation, and on March 1, 2011 the sampling and analysis for CBOD5 began.

Testing values for BOD and CBOD during this time were as follows:

2010 BOD5:

- Highest daily value: 5.4 mg/l
- Highest monthly average: 1.4 mg/l

2011 CBOD5:

- Highest daily value: 3.3 mg/l
- Highest monthly average: 1.4 mg/l

With a current permitted CBOD5 limit of 5.0 mg/l, these results are well below maximum discharge allotment values.

The facility has been able to achieve this level of efficiency and low values due to utilizing MBR filter technology. The 500-D cassettes manufactured by GE/Zenon Canada contained within each filter are composed of fibers with pores as small as 0.04 microns, resulting in a treated effluent that not only meets but surpasses final discharge requirements. As such, these cells are considered the most operationally-efficient units currently available for wastewater treatment applications.

Typical MBR filter performance yields a final effluent containing BOD and TSS values of less than 2.0 mg/l while reducing E. coli values of 1 mpn prior to the ultraviolet light (UV) disinfection process. This results in a combined overall reduction on CBOD5, TSS, and E. coli of approximately 99 percent efficiency.

If the request for reduced sample frequency on CBOD5 to 1/week or less is granted, and at any time the facility were to see an increase in CBOD5 values resulting in greater than our current permit Quantification Limit (QL) of 5.0 mg/l, the Town would immediately increase the sampling back to 5/week for verification of the results and report them as required by the current VPDES permit until such time as the results return to normal operational values.

The current CBOD5 analysis cost is \$81.00 per test. The reduced frequency in monitoring will result in an estimated cost savings of approximately \$25,000.00 per year. Current analysis costs of this parameter are estimated at a rate of \$568.00/week or \$29,564.00/year based upon the current sampling schedule of 5/week. By reducing to 1/week or less, the total annual estimated cost for CBOD5 analysis would then be reduced to \$4,200.00/year.

In addition to excellent CBOD5 performance, we have also seen excellent E. coli results both before and after the ultraviolet (UV) disinfection system with relatively the same values of less than 1 mpn. As with CBOD5, if the request to decrease the monitoring frequency of E. coli to 1/week or less is granted, upon seeing any E. coli values that exceed the normal values of less than 1 mpn, the Town would immediately increase E. coli monitoring back to the current 3/week until analytical values once again become less than 1 mpn. As supporting documentation of removal efficiency and disinfection compliance, an E. coli analysis (3/week of both pre-UV and post-UV effluent) is also enclosed herein.

With this in mind, the Town would also like to request permission to reduce the operation of the UV system. Although electrical costs to operate the UV system itself are difficult to calculate as a percentage of overall power requirements, a significant savings can be

achieved by decreasing power consumption. In addition, the manufacturer of the system, Aquionics, recommends that the bulbs be changed out each year in the entire system. With a total of eight bulbs per unit for two units, the total number of bulbs is sixteen at a cost of approximately \$800.00 per bulb. This alone amounts to \$12,800.00 per year.

If decreasing the UV system operation, the Town proposes to continue to operate the units at a minimum of 1/week for both units for 24 hours each to ensure full and reliable operation. If any E. coli values exceed normal values of less than 1 mpn, the UV system would be activated immediately and remain in continuous operation, along with increased frequency in E. coli monitoring at 3/week, until analytical values once again become less than 1 mpn.

All testing results will be reported as currently required on the monthly DMR.

Current E. coli monitoring costs are approximately \$10,950.00/year for each individual \$64.00 test performed. A reduction in E. coli monitoring to 1/week or 1/month would result in a cost savings of \$6,460.00 and \$7,870.00, respectively.

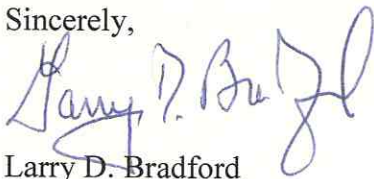
Supporting documentation for sample analysis for both parameters is enclosed herein.

It should be noted that the projected financial savings seen in sample reduction frequency does not reflect the expenditures associated with maintaining laboratory certification/compliance and are reflective of analytical costs only. The actual cost savings to the Town will be more. The financial savings derived from a reduction in sampling frequency will be a significant benefit to a community that is already experiencing significant financial hardship.

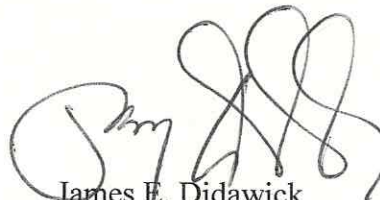
In conclusion, it is the Town's position that the wastewater treatment facility will still be capable of not only meeting but exceeding treatment requirements while experiencing both immediate and long-term financial savings without running the risk of compromising treatment quality, receiving stream habitat, or the environment.

Thank you for your consideration of our request. Should you have any questions or need any further information, please do not hesitate to contact us.

Sincerely,



Larry D. Bradford
Town Manager



James E. Didawick
Superintendent of Public Works

Enclosures

MONTH Feb.

WWTP E.COLI DATA

YEAR 2012

DAY	SAMPLE	OPER.	COLLERT		QUANTI-TRAY		INCUB.	IN INC.	OUT INC.	CALC.	OPER.
	COL. TIME	INIT.	18 / 24	LOT #	51 / 97	LOT #	TEMP °C	TIME	TIME	MPN	INIT.
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Prior TO u.v. 3/6/12. Day before

MONTH Feb.

WWTP E.COLI DATA

YEAR 2012

	SAMPLE	OPER.	COLILERT		QUANTI-TRAY		INCUB.	IN INC.	OUT INC.	CALC.	OPER.
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29	1035	JWS	24	KG404	51	LG004	35.0°	1042	1042	<1	JWS
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After U.V.

3/6/12

Dary Pickman

MONTH *MARCH*

WWTP E.COLI DATA

YEAR *2012*

	SAMPLE	OPER.	COLILERT		QUANTI-TRAY		INCUB.	IN INC.	OUT INC.	CALC.	OPER.
DAY	COL. TIME	INIT.	18 / 24	LOT #	51 / 97	LOT #	TEMP °C	TIME	TIME	MPN	INIT.
1	/	/	/	/	/	/	/	/	/	/	/
2	1038	JWS	24	KG404	51	66004	35°	1045	1209	< 1	EP
3	/	/	/	/	/	/	/	/	/	/	/
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5	1015	JWS	24	KG404	51	66004	35°	1020	1020	< 1	OWS
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31											

Prior to u.v. 3/6/12
Don Richman

MONTH *March*

WWTP E. COLI DATA

YEAR 2012

[illegible]

After u.v.

3/6/12

Dary Behman